Volunteer Lake Assessment Program Individual Lake Reports

JENNESS POND, NORTHWOOD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,837	**Max. Depth (m):**	8.5	**Flushing Rate (yr^{1}):**	1.6
Surface Area (Ac.):	232	**Mean Depth (m):**	2.7	**P Retention Coef:**	0.68
Shore Length (m):	6,100	**Volume (m^{3}):**	2,535,500	**Elevation (ft):**	657

TROPHIC CLASSIFICATION

Year	Trophic class
1991	MESOTROPHIC
2009	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

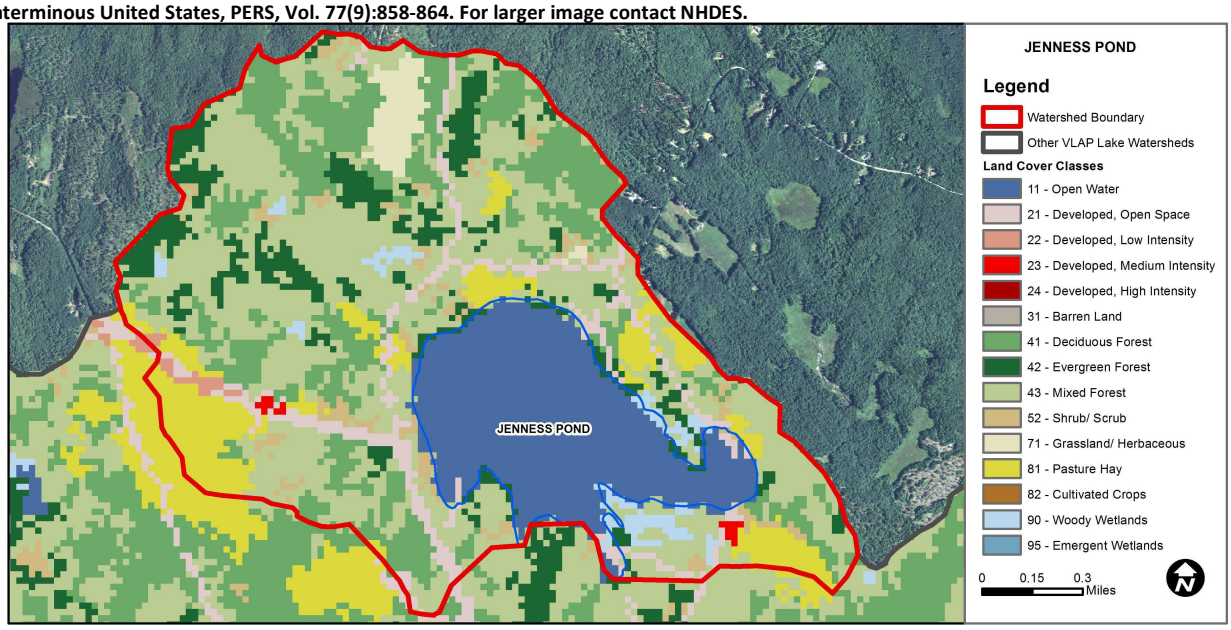
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.
	Cyanobacteria	Slightly Bad	Cyanobacteria bloom(s).
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

JENNESS POND BEACH	E. coli	No Data	No Data for this parameter.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	17.4	Barren Land	0	Grassland/Herbaceous	1.99
Developed-Open Space	5.42	Deciduous Forest	16.78	Pasture Hay	8.14
Developed-Low Intensity	0.46	Evergreen Forest	8.74	Cultivated Crops	0
Developed-Medium Intensity	0.27	Mixed Forest	35.65	Woody Wetlands	2.06
Developed-High Intensity	0	Shrub-Scrub	3.04	Emergent Wetlands	0

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
JENNESS POND, NORTHWOOD, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated in June and July and were greater than the state median. Average chlorophyll levels have remained higher since 2011. Historical trend analysis indicates highly variable chlorophyll between years.
- **CONDUCTIVITY/CHLORIDE:** Deep spot conductivity was average for most NH lakes. Conductivity in Bapple Spring Brook, Tupelo Brook and Horse Farm was elevated, and the chloride was also slightly elevated. Historical trend analysis indicates significantly decreasing (improving) epilimnetic conductivity since monitoring began. We hope to see this continue!
- **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low in June and July and much less than the state median. Historical trend analysis indicates relatively stable epilimnetic phosphorus with moderate variability between years. Phosphorus was elevated in Hood Brook in June, and Coletti Brook and Morse Spring Brook in July and the turbidity of the samples was also elevated. Lab notes indicate samples contained a small amount of sediment and were colored light brown. Sediment and organic compounds could have contributed to the elevated phosphorus.
- **TRANSPARENCY:** Transparency was stable in June and July and was better than the state median. Transparency has improved slightly since 2009; however historical trend analysis indicates significantly decreasing (worsening) transparency since monitoring began.
- **TURBIDITY:** Turbidity was elevated in Hood Brook in June and in Coletti and Morse Spring Brooks in July. Small amounts of sediment and color were noted in the samples. Minor rainfall occurred prior to the June sampling which may have flushed upstream wetland systems contributing to the elevated levels in Hood Brook. Low tributary flow may have contributed to the elevated levels in Coletti and Morse Spring Brooks in July.
- **PH:** Deep spot pH levels were lower than desirable in June, and tributary pH levels are generally low and potentially critical to aquatic life. Historical trend analysis indicates highly variable epilimnetic pH between years.
- **RECOMMENDED ACTIONS:** Conduct storm event and bracket sampling of Coletti, Hood and Morse Spring Brooks to identify potential pollution sources contributing to elevated phosphorus and turbidity levels. Continue chloride monitoring of tributaries and deep spot to establish long term trends. Keep up the great work!

Table 1. 2013 Average Water Quality Data for JENNESS POND

Station	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
Bapple Spring Brook			33	142.2	6			0.48	5.91
Coletti Brook			3	45.2	23			2.37	6.09
Epilimnion	2.65	5.27	10	54.9	6	3.95	4.40	0.78	6.59
Hypolimnion				54.4	7			0.82	6.40
Hood Brook				60.8	50			7.16	6.24
Horse Farm			19	72.4	3			1.25	5.63
Morse Spring Brook			11	68.8	21			2.69	6.39
Outlet				52.9	8			0.88	6.34
Thurber Brook				46.9	3			0.18	5.72
Tupelo Brook				99.1	9			1.04	4.34

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data highly variable.
Conductivity	Improving	Data significantly decreasing.	Transparency	Degrading	Data significantly decreasing.
			Phosphorus (epilimnion)	Stable	Trend not significant; data moderately variable.